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Several omissions and slight errors of statement, some of which seem worthy of note are as follows. On page 39, it is stated that until 1883 petroleum was used chiefly for medicinal purposes. This seems rather an understatement of its uses, for, according to the Census figures quoted by the author on page 62, over \$26,000,000 worth of petroleum was produced in 1880. On page 111, puzzuolano is described as though it was only an artificially prepared cement, whereas the original material derived from Puzzuoli was natural volcanic ash. The natural cements prepared from volcanic ash receive no notice in the classification used by Ries.

The list of the different clays is quite complete, but the absence of "slip-clay" is noted. This is such an interesting and important group of clays and its value is so largely determined by chemical composition that it deserves some treatment. Another slight error occurs on page 191, where it is stated that the main value of monazite is for "the manufacture of mantles for incandescent lights"—the word incandescent is inapplicable.

One point on which students differ with Professor Ries is the use of the term "thermal" spring. He states that a thermal spring is one whose temperature is 70° Fahrenheit or over (page 204). The old definition, that a thermal spring is one whose temperature is 2° F. above the mean annual temperature of the place of exit, seems in many ways more desirable, for a spring in the tropics with a temperature not higher than 70° F. ought not to be considered a thermal spring, while a spring of 40° or 50° F. in high latitudes should be so considered.

A valuable working bibliography is appended to each chapter, and contains references to many of the latest publications.

P. S. S.

Notes.—The *Geological Magazine* for November and December (decade 5, vol. 2, nos. 11 and 12) contains three articles of general geologic interest. The first, in the November number, is by Professor Jamieson on "Some Changes of Level in the Glacial Period," the region under discussion being mainly Scotland and portions of Scandinavia. The second article, in the December number, on "The Geological History of Victoria Falls," is by G. W. Lamplugh. These falls are particularly interesting on account of the peculiar zigzag pattern of the canyon below the falls. In the December number is also the final paper of Sir H. H. Howorth's article on "The Recent Geological History of the Baltic."

Water Supply and Irrigation Paper 119, by J. C. Hoyt and B. D. Wood, is an "Index to the Hydrographic Progress Reports of the United States Geological Survey from 1888-1903." This is a valuable paper, as it brings together in one volume a bibliography of the papers published by the Survey, which have heretofore not been satisfactorily listed in the bibliographies.

Bulletin 7, Fourth Series, Geological Survey of Ohio, by Charles S. Prosser, published in Columbus, November 1905, and entitled "Revised Nomenclature of the Ohio Geological Formations," is an important contribution to stratigraphy. It successfully presents the results of much detailed study, and places the previously rather loosely defined horizons in their proper positions. It shows not only their relation to each other, but, in a broad way, correlates the formations with those outside the State. *Bulletin 7*, however, is only a preliminary report, so that the final report is awaited with interest.

Two new maps of portions of Alaska are included in the report of L. M. Prindle on "The Gold Placers of Fortymile, Birch Creek and Fairbanks Regions, Alaska"—*Bulletin 251, United States Geological Survey*. The report is based mainly on reconnaissance work, but certain facts seem to have been quite thoroughly worked out. One fact of most general interest is the determination that a large part of the placer gold has been derived from the quartz veins in a series of metamorphic sediments.

The Journada del Meurto of New Mexico is a bolson plain that has long been regarded as one of the most desert regions in the State. Recent studies by Keyes, published in *Water Supply and Irrigation Paper 123*, show that the district affords promise as an artesian basin. The shallow ground-water conditions are not very good, but the porous Cretaceous sandstone which is folded into a syncline and has the impervious Permian red beds at its base, affords good water at a depth of not over 2000 feet, even in the center of the basin. The water is practically fresh, the slight saline scale deposited by evaporation being common salt, so that it is adapted to all domestic purposes.

Bulletin 266 of the United States Geological Survey contains the "Palæontology of the Malone Jurassic Formation of Texas," by Francis Whittemore Cragin, with "Stratigraphic Notes on Malone Mountain and the Surrounding Region near Sierra Blanca, Texas," by T. W. Stanton. The report contains 28 plates of fossils, and one topographic map of the district.

E. C. Eckel has prepared a report on "The Cement Materials and Industry of the United States," which forms *Bulletin 243 of the United States Geological Survey*. The report consists of two distinct portions: first, the technical processes involved in cement manufacture, and second, the distribution of cement materials. The cement materials are divided into the Portland cements, the natural cements, and the Puzzolan cements. The distribution of each of these different cements is treated according to States. The arrangement by States is alphabetical, and consequently necessitates repetition, which would have been avoided if a geological arrangement had been selected. The 15 map plates are of considerable importance, as they present much new and accurate information.

An extremely interesting portion of *Water Supply and Irrigation Paper 105*, by T. U. Taylor, on the "Water Powers of Texas" describes the Austin dam and its destruction, in April, 1900. The failure of the dam seems to be attributable to lack of geologic investigation before construction. This is shown by the fact that the minimum flow of the Colorado was considerably less than supposed, and also that an old watercourse filled with sand, etc., was allowed to remain as a portion of the floor for the foundation of the dam. The photographs reproduced in the text make it evident that the destruction of the dam was not due to weaknesses in the dam itself because not only the dam but also part of the foundation were carried down stream.

"The Water Resources of the Philadelphia District," by Florence Bascom, is published as *Water Supply and Irrigation Paper 106 of the United States Geological Survey*. It contains data concerning the precipitation and run-off for many of the streams. Some of the observations extend over a period of more than thirty years, so that the averages may be considered as characteristic of the district. From these records it appears that in the district as a whole evaporation is in excess of run-off.

A series of five papers regarding the loess of the Mississippi Valley and of Iowa in particular, by Professor Shimek, has recently been received. These papers may be found in the *Bulletin of the Laboratories of Natural History of the State University of Iowa*, (vol. 5, no. 4, pp. 298-381, 1904). These articles support, in a forceful manner, the theory of the æolian origin of loess. Professor Shimek treats particularly the loess of Natchez, the Lansing deposit of so called

loess, in which the Lansing skeleton was found, determining that this deposit is really not loess, and arraigns two or three recent supporters of the aqueo-fluviatile origin of the loess.

The rapid development of underground workings at Cripple Creek and the consequent increase in detailed information has made it desirable to resurvey the field. The results — embodied in *Bulletin 245 of the United States Geological Survey*, "Report of Progress in the Geological Resurvey of the Cripple Creek District, Colorado," by W. Lindgren and F. L. Ransome — furnish an apt illustration of the present efficiency of the Survey. While there are modifications of many of the details previously published concerning the geology of this very complex region, the main facts previously outlined are substantiated. An interesting note in this report states that the depth to which the oxydation of the ore bodies has penetrated is oftentimes a thousand feet.

"A Gazetteer of Indian Territory," by Henry Gannett, forms *Bulletin 248 of the United States Geological Survey*, published in Washington, 1905. In addition to 59 pages devoted to place names, there are 6 pages giving a brief description of the larger topographic features, population, and products.

Two papers concerning certain deposits of economic significance in Illinois, prepared by H. F. Bain, have recently been published by the United States Geological Survey. The first of these is entitled the "Zinc and Lead Deposits of Northwestern Illinois," *Bulletin 246*, and the second is "The Fluospar Deposits of Southern Illinois," *Bulletin 255*. In the former paper, Bain regards the disseminated lead and zinc minerals as having been deposited apparently from sea water and contemporaneously with the sediments in which they occur. In this report, Bain dismisses the other theories of origin in a very peremptory manner, and the reader wonders whether they have been carefully considered.

The volume of "Contributions to Devonian Palæontology for 1903," by H. S. Williams and E. M. Kindle, consists of two distinct parts. The first deals with the Devonian and Mississippian faunas of Virginia, West Virginia, and Kentucky, while the second part treats of the Devonian of central and northern Pennsylvania. The portion of the paper dealing with the Upper Devonian faunas of the middle Appalachians, with a chart showing range of species, is of most general interest. This report is published as *Bulletin 224 of the United States Geological Survey*, and contains 144 pages, 4 plates, and 3 figures.

An interesting preliminary paper by G. O. Smith and F. C. Calkins, entitled "A Geological Reconnaissance across the Cascade Range near the 49th Parallel," is published by the United States Geological Survey as *Bulletin 235*. The paper deals with the geology and petrography of the region traversed. The effect of the prevailing winds, etc., is strikingly shown by the difference in amount of vegetation on the east and west sides of the range, and also on the position and number of glacial *cirques*. A striking illustration of a glaciated valley is shown in Figure B, Plate 3.

Bulletin 245 of the United States Geological Survey, prepared by S. S. Gannett, gives the "Results of Primary Triangulation and Primary Traverse for the Fiscal Year, 1903-1904."

Fuller, Lines, and Veatch have prepared *Bulletin 264 of the United States Geological Survey*, which presents an epitome of the method of work, and an outline of the plan of organization of the Division of Hydrology. The importance of preserving records of the various strata passed through in well-drilling is strongly emphasized. It is proposed to collect not only the written description of the kinds of rock cut, but also to retain a sufficient amount of the original sample to afford a basis for subsequent study and comparison by members of the Survey.

"The Comparison of a Wet and Crucible Method for the Assay of Gold Telluride Ores, with Notes on the Errors Occurring in the Operations of Fire Assay and Parting," by W. F. Hillebrand and E. T. Allen, forms *Bulletin 253 of the United States Geological Survey* publications. The paper deals largely with the chemical methods employed, and concludes that the crucible method is fully as accurate as the wet method.

The cleavage of rocks is treated in *Bulletin 239 of the United States Geological Survey*, a volume of 216 pages, 27 plates, and 40 text figures, by C. K. Leith. The author proposes to divide cleavage into two great groups, original and secondary. Under original cleavage, he includes the parting between bedding planes of sedimentary rocks, flow structure in lavas, concentric jointing in deep-seated igneous rocks, etc. The secondary cleavage structures are divided into two groups, flow cleavage and fracture cleavage. The paper presents a careful investigation, but it may be questioned whether it is desirable to group so many unrelated features under one term.

Bulletin 237 of the United States Geological Survey is a paper by L. V. Pirsson on the "Petrography and Geology of the Igneous Rocks of the Highwood Mts., Montana." The report treats mainly the petrography of this volcanic center, with a brief review of the geology of the district. The portion of general interest is the bearing of this region upon the theories of the consanguinity of lavas.

P. S. S.